

ABSTRACT

Digital data is rapidly embedded in color/grayscale digital data by switching between a set of multi-level screens or quantizers. Each screen can be tuned to maximize the quality of the digital data product on the intended display medium, so

5 that the quality of the displayed product does not suffer. The data embedding method/algorithm of the invention generally involves generating a set of multi-level screens, each of which is generated by selecting a set of colors that comprise the colors that can be output by that multi-level screen; screening the input digital medium with the generated multi-level screens using a dither matrix and a set of

10 level matrices; and selecting, for each of select number of pixel locations in the input digital medium, one of the level matrices, based on a message symbol to be embedded at that pixel location, to create an output.